CmpSci 187: Programming with Data Structures
Spring 2015

Lecture #1

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Contents

1 Introduction

About the Course

- What is CmpSci 187?

- Programming Maturity?

- Data Structures?

- Algorithm Analysis?

- 187's place in the world

- Are you a CmpSci major?, March 1 deadline

2 Administrative Stuff

Course Structure

- Two lecture sections, two instructors, four TAs, twelve discussion sections.

- Help mail address cs187help@cs.umass.edu

- Course requirements and grading

- Syllabus, exams, and solutions
- Public site
- Moodle site
- Lecture slides
- Programming assignments submitted
- Forums
- Gradebook

Academic Honesty

- Exams
- Projects
- Discussions

3   Software Engineering

What is Software Engineering?

- What is software?
- What is engineering?
- SE and real engineering

Goals of Software Engineering

- Software that works (correct, complete, reliable, and efficient)
- Software that is modifiable
- Software that is reusable
- Software that was completed on-time and within budget

Software Life Cycles

- Analysis

- Requirements

- Specification

- Design

- Implementation

- Testing and verification

- Delivery/deployment

- Operation

- Maintenance

- Obsolescence

Practice Clicker Exercise

Suppose you plan to build a new iPhone app. Which of these should you do first?

1. Write the main method of the NewIPhoneApp class.

2. Make a detailed specification of the input and output of the app.

3. Determine what, in general, you would like the app to do.

4. Divide the project into manageable pieces.

SE Methodologies

- Waterfall

- Spiral model (setting objectives, risk assessment, development, and validation)

- Agile methods (customer involvement, incremental delivery, allow changes, pair programming).